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# Impact of new laboratory studies of $N_2O_5$ hydrolysis on tropospheric $NO_x$, $O_3$ and OH

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The impact of new laboratory studies of $N_2O_5$ hydrolysis in aerosols on global model simulations of tropospheric chemistry are studied. We use data from these new studies to parameterize the reaction probability $\gamma_{N2O5}$in the GEOS-CHEM global model. The parameterization is given as a function of local aerosol composition, temperature, and relative humidity. Globally we find that the mean $\gamma_{N2O5}$(0.02) is much lower than commonly assumed in models (0.1). Relative to a model simulation assuming a uniform $\gamma_{N2O5}$= 0.1, we find increases in mass-averaged tropospheric $NO_x$, $O_3$, and OH concentrations of 7%, 4%, and 8% respectively.